To Make Bricks, Stones, and other Absorbent Materials, Impervious to Water or Damp.—The process consists in submitting the surface of the stone, or brick to the action of two solutions. The first a solution of common soap; the second a solution of alum. The brick or porous stone is first dipped into the solution of soap, and then into the alum; by the chemical action which ensues an aluminous soap is produced, which fills the pores, and resists the action of water as well as the moisture of the atmosphere. The solution may be applied with a brush or syringe, according to circumstances. Colouring may also be added if necessary.

The Shannon Navigation Improvement.—The commissioners have contracted with Messrs. Sikes and Brookfield for the sum of 40,000*l.* to execute the proposed works at Surmanbarry, Lanesborough, and to deepen the bed of the river on that line.

Bituminous Street Paving.—Notwithstanding several unsuccessful trials of bitumen in the paving of carriage-ways, as in the Vauxhall-road some years ago, and more recently in Oxford-street, the Parisian Bitumen Company is at this time engaged in paving the square space opening into Hungerford Market, at the bottom of Hungerford-street, Strand. As this place is not subject to the same kind of wear and tear as a street through which a rapid traffic is constantly passing, it is possible that the bitumen may here answer better than in former trials, and in any case it may interest our readers to know the method pursued by the company in their present operations. The bituminous pavement consists of blocks a foot square and six inches in depth. These blocks are composed of an artificial bitumen and angular broken stones, forming a concrete of considerable tenacity. When the granite stones of the old pavement had been taken up and removed, a surface with a considerable convexity in a transverse direction was prepared to receive the bituminous blocks. These are then laid down in straight lines longitudinally, and breaking joint transversely. The blocks are not placed close together, but with a space between them of about one inch all round each block. This space is left for the purpose of being filled with melted pitch in order to fix the blocks in their places. These spaces or joints between the blocks are filled in with pitch at several different times; but when the pitch joint is only two or three inches in depth, the blocks are quite immoveable. When the first thickness of pitch has become quite solid, the joints are filled with the same substance up to the top, and before the top surface of the joint has time to set, a workman sprinkles it over with a sharp, yellow, large-grained sea sand, which sets firmly in the pitch. The pavement, when finished, presents the appearance of an ordinary stone pavement, except that the blocks, instead of ranging in straight lines transversely across the road, are placed in straight lines in a longitudinal direction. We can see no good reason for this deviation from the old practice, while on the other hand it has obviously one great defect, namely, that the traffic falling on the surface is checked in its escape to the sides at every change of stones, and thus the surface of the roadway must be kept constantly wet. The unbroken transverse lines of joints, in an ordinary pavement, answer the useful purpose of minute channels to convey the water off to the sides. It may be said that the bituminous surface will prevent the penetration of water, and that the water lodging on the surface is of no consequence. We cannot agree in this, but consider, on the other hand that for this very reason bituminous pavement should always be laid with a slope in some direction, so that the water, which can only otherwise escape by evaporating, may drain off it as fast as it falls.—*Engineer and Architect's Journal.*

Unsuccessful Competition Designs.—The system of competition adopted in this country is constantly developing the taste and genius of our times in sculpture, architecture, and construction, but of the numerous elegant designs so frequently produced there is not at present any record, except in the minute-books of the corporations or societies who are daily soliciting the gratuitous services of our artists. The circumstance is the more to be regretted, as the buildings and works which are erected give too frequently an unfavourable view of the taste and knowledge of the age. To perpetuate the existence of these designs, and to give posterity an opportunity of deciding upon the relative merits of the present race of professional men, and of comparing what was done with what might have been done, we must have recourse to the art of engraving. One of the objects of an Architectural and an Engineering Journal should be, we think, to aid in the perpetuation of these rejected designs, by which the present and future age will be able to decide from examination, rather than from partial historians. The increasing circulation of this work, and the assistance to be received from the professions, both at home and abroad, give us an opportunity of doing this to some extent. Without such a permanent record, a few years will be sufficient to erase from the mind of the public even the remembrance of the names of those who have competed for public works, and who, in many instances, have produced drawings which, as productions of genius, art, and science, have been far superior to those that have been successful. It will not perhaps be possible to do all that we may wish, or all that our subscribers may desire, but we will give every possible assistance to the publication of valuable unsuccessful designs, and our exertions shall only be limited by the unavoidable cost of such illustrations.—*The Architect, Engineer, and Surveyor.*

Newly Elected Academicians.—At a meeting of the Royal Academicians, held in Trafalgar-square, on the 10th ult., Sir William Ross was elected an academician in place of Sir Francis Chantrey, deceased; Mr. James Tibbits Willmore an associate engraver, in the place of Mr. William Brawley, deceased. At the same time, Mr. Henry Timbrell was elected a travelling student.

How Long will the Coal-fields of Great Britain Last?—According to Conybeare and others of our ablest geologists, two thousand years at least. But Sedgwicke and Buckland say that "four hundred years will leave but little more than the names of our best coals." And the South Shields Committee, in their recent report on accidents in mines, not only concur in this opinion, but describe the Tyne portion of our great northern coal-field as beginning already to experience the difficulties of exhaustion in the finer descriptions of coal. "Of an abundant supply of coal from other parts of the world, however, when our own mines are exhausted, there appears to be no fear; for France, Belgium, Saxony, Bohemia, Silesia, Russia, Syria, the East Indies, China, Australia, and the United States, are all mentioned as being rich in this valuable mineral. English coal is now sold at the coasts of France and America at a profit;" but this arises, in the opinion of the South Shields Committee, solely from the want of capital in these countries to work their own mines to advantage; a state of things which it is not reasonable to expect can always continue.

Novel System of Water-Pipes.—We have received a communication describing a new system of pipes for conveying pure water, gas, and steam to towns and cities, one great advantage of which would be a certain means of quickly extinguishing fire. It is proposed to carry the water raised from reservoirs, by pipes or aqueducts, along the tops and by the sides of the houses, instead of underground, as at present. C. E. Coote, of Mornington House, Clifton, Bristol, is the inventor of the plan, which appears to us to be perfectly feasible.—*New Farmer's Journal.*

It cannot be too widely known, that, in ordinary cases, a common cistern placed in the roof, with a pipe let down through each floor, would gather and let down plenty of rain-water in flood each floor in case of fire.

Nankin and its Porcelain Wonder.—Numerous, as you may conceive, have been the pilgrimages made to the far-famed "Porcelain Tower," for the first time in inspecting any of the monuments renowned of this country, no disappointment has been experienced, while comparing what actually is, with what the legends of the book-makers in China describe to be. It is, indeed, a most elegant and singular structure, as remarkable for its correct proportions as for the rare material of which it is partially composed. I say partially, because the mass of building is not of porcelain, but is composed of common brick, with its facing and lining of beautiful white glazed porcelain bricks or slabs, fixed into the masonry by means of deep keys or shoulders, cast like a half T, on the brick. Its form is octagonal, and rooming up each of the angles is a moulding of large tiles of very fine clay, glazed and coloured red and green alternately; round each story runs a high balustrade formed of green porcelain, upon which four arched doorways open, set to the four cardinal points, the arches being elegantly turned with large glazed tiles, cast in all imaginable fancies of design and variegation of colour, representing wild beasts, demons, deities, monsters, &c. It appears to be a "sight" amongst the Chinese themselves, for there are priests or bonzes attached to the building to keep it in order, who earn their consideration by distributing to the visitors lithographed elevations of the tower, with descriptions attached, and who seem to have the duty intrusted to them of illuminating it on gala occasions. This is effected by means of lanterns made of thin oyster-shells, used in lieu of window glass by the Chinese, which are placed at each of the eight angles on every story, and the effect of whose subdued light on the highly reflective surface of the tower must be most striking and beautiful.—*Hombay Examiner.*

An Extraordinary Bar of Iron.—The largest bar of iron ever made was rolled at the Cyfartha Iron-works, near Merthyr Tydvil, on Saturday last, and is, we are informed, for a house in Holland. It is 9 cable bolt, 25 feet in length, and 6 inches in diameter, and weighs about 2,400lb. The pile was taken from the heating-furnace and put at once into the rolls, just in the same manner as they roll bars of an ordinary size. It was rolled under the able superintendence of Mr. Robert Crawshay.

Organs.—The comparative size of the following organs will give our readers an idea of their power, &c.:—St. Paul's total of pipes, 1,783; St. Peter's, Cornhill, 2,090; Exeter Hall, 2,187; Birmingham, 2,636 (to be enlarged); York, 4,089; Christ Church, Newgate-street, 4,500? And the great organ at Haarlem, 4,551. An organ has lately been erected in Great George-street Chapel, Liverpool, by Mr. Hill, who built the York and Birmingham instruments under the direction of Mr. Gauntlet, who opened it last year, which may be termed the English Haarlem organ, for it was built on the same principles, and has the largest swell in Europe; and the large pedal-pipes are 32 feet long, within one of which a Daniel Lambert might take a nap. The Haarlem organ is 108 feet high, and 50 broad. *Musical World.*

A Strange Meeting.—Alexandria, Feb. 6.—A curious meeting took place last month in the desert between Suez and Cairo. A Mr. Fawcett, who arrived here by the Oriental on his way to India, when at Cairo, heard that his brother was expected by that month's steamer from Bombay. The two brothers had never seen each other, the one had been born in England, whilst the elder brother was in India, where he had lived thirty-two years. As the younger Mr. Fawcett was proceeding across the desert on his donkey, he called out to the groups of travellers he met coming from Suez, whether Major Fawcett was amongst them; and towards midnight a voice answered to Mr. Fawcett's call, and the two brothers shook hands in the dark. They both expressed a wish to see each other's face, but no light was to be had, and the two parties they belonged to having gone on, they were obliged to part again, not having been together more than three or four minutes.

Florence.—*The Duomo.*—The Grand Duke has given orders that the "Gran Duomo" of Florence shall be completed under the direction of the Imperial Academy. The dome was begun to be built in 1296, by Arnolfo di Lapo. In the works now to be commenced, the materials to be employed are marbles from the quarries of the two mountains Seravezza and Altissimo, in some respects more beautiful than those of Carrara, and they are those which Michael Angelo made use of.

Buns.—Among the numerous productions of London may be reckoned a species of vegetable called Buns: they partake also of a mineral nature, as fragment of stone, called "grit," are frequently found in them. Naturalists having occasionally (very rarely) observed a sort of ossification, resembling a currant upon the surface of the bun, were led to undertake a mining speculation, for the discovery of any of these curiosities which might by chance be concealed in the bowels; but after a deal of trouble and great outlay of capital, the specimens were found so rare and so inferior in quality, that they did not reward the trouble of searching for them, and the enterprise was relinquished. In the centre of these buns is described a circle, and the outer surface is divided into a number of mathematical sections, forming together a mathematical problem, which it would puzzle Euclid to solve. Buns are commonly divided into three classes—viz. Bath or two-penny, penny, and halfpenny stale, which are principally used by the children of the poorer population of the city, or by oppressed and poorly-paid mechanics, who procure them whilst on their way to their morning labour. It has been asserted that they derive some sustenance from them, but this is much doubted by geologists, and it is generally believed that they are only of service in sharpening their teeth for the almost equally dry morsel of bread which constitutes their breakfast, owing to the grinding parsimony of their employers. To these three classes may be added a kind known by the name of "Chelsea," this species having, it is said, been first discovered in that locality. These are in the form of a "many-folded" serpent, with its tail in its mouth, and are sometimes used as the emblem of eternity, which simile is not inapt, as it takes a prodigious time to get through them.—*Punch.*

A Doubtful Compliment.—A newly married lady, who was very fond of her husband, notwithstanding the extreme ugliness of his person, once said to a friend—"What do you think? my husband has gone and laid out fifty guineas for this large baboon on purpose to please me!" "The dear little man!" cried the other (looking at the baboon); "*it is just like him.*"

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